

Section 1. Product and Manufacturer Identification

Product Name:	ONE-Step™ Luciferase Assay System
Catalog Number:	60690-1, 60690-2, 60690-3, 60690-5
CAS number:	Not available.
Recommended Usage:	<p>This product is intended for use in a research setting for the growth of cell culture.</p> <p>This product is sold only for research use by qualified laboratory personnel, and is not to be used as a drug, medical device, food additive, cosmetic, nor household chemical. It is not to be used in diagnostic, therapeutic, consumer, and agricultural applications.</p>
Manufacturer Information:	<p>BPS Bioscience, Inc. 6405 Mira Mesa Blvd., Suite 100 San Diego, CA 92121 USA. Tel: 1-858-202-1401 www.bpsbioscience.com</p>

For a complete list of components shipped with a product, please review the product datasheet, which is available on our website at www.bpsbioscience.com. A safety datasheet for each component is available upon request.

Section 2. Hazard(s) Identification

GHS Classification

Acute Toxicity, Oral (Category 4)
Acute Aquatic Toxicity (Category 3)
Short-term (acute) Aquatic Toxicity (Category 3)
Long-term (chronic) Aquatic Toxicity (Category 3)
Skin irritation (Category 2)
Serious eye damage (Category 1)

Signal Word: **Danger**

Hazard Pictograms:



Hazard Statement(s):

H302: Harmful if swallowed
 H315: Causes skin irritation.
 H318: Causes serious eye damage
 H331: Toxic if inhaled
 H402: Harmful to aquatic life
 H412: Harmful to aquatic life with long lasting effect

Precautionary statements

Prevention:

P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
 P264: Wash hands thoroughly after handling
 P270: Do not eat, drink or smoke when using this product
 P271: Use only outdoors or in a well-ventilated area.
 P273: Avoid release to the environment.
 P280: Wear protective gloves/protective clothing/eye protection/face protection.
 P285: In case of inadequate ventilation wear respiratory protection

Response:

IF ON SKIN	P302 + P352: Wash with plenty of soap and water. P363: Wash contaminated clothing before reuse. P332 + P313 If skin irritation occurs: Get medical advice/ attention.
IF SWALLOWED	P301 + P310: Immediately call a POISON CENTER or doctor/physician. P330 - Rinse mouth.
IF IN EYES	P305 + P351 + P338: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF INHALED	P304 + P340: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P330: Rinse mouth with copious amounts of water.

	P342 + P311: If experiencing respiratory symptoms: Immediately call a POISON CENTER or doctor/physician.
--	--

Storage: Not Applicable

Disposal: P391: Collect spillage.
P501: Dispose of contents/ container to an approved waste disposal plant

Other Hazards: Not Applicable

HMIS

Health	2
Chronic Health Hazard	*
Flammability	0
Reactivity	0

Section 3. Composition and Information on Ingredients

Chemical Characterization:

Component	CAS No.	Common Name	EINECS-No	Weight-%
DL-Dithiothreitol	3483-12-3 / 27565-41-9	DTT, Cleland's Reagent	248-531-9	12-17%

This product is intended for research only and is not for direct administration into animals or humans.

Section 4. First Aid Measures

Description of First Aid measures

Skin contact: Rinse with plenty of soap and water. Immediate medical attention is not required.

Eye contact:	Rinse cautiously with water for several minutes, including under the eyelids. Remove contact lenses, if present and easy to do. Rinse for at least 15 minutes. Get medical advice/attention if you feel unwell or are concerned.
Ingestion:	Rinse mouth with water. Immediately seek medical advice. Do not induce vomiting unless instructed by a physician.
Inhalation:	Remove source of exposure or move person to fresh air and keep comfortable for breathing. Get medical advice/attention if you experience respiratory symptoms.
Notes to Physician:	Treat symptomatically.

Most important symptoms and effects, both acute and delayed:

See hazard statements in Section 2 and toxicology statements in Section 11.

Indication of any immediate medical attention and special treatment needed:

None.

Section 5. Fire Fighting Measures

Conditions of flammability	This product is not flammable.
Suitable extinguishing media	Water spray. Carbon dioxide (CO ₂). Foam. Dry chemical.
Unsuitable extinguishing media	No data available.
Special hazards arising from the substance or mixture	None known.
Special protective equipment for firefighters	Standard procedure for chemical fires.

Section 6. Accidental Release Measures

Personal precautions and protective equipment	Ensure adequate ventilation, and avoid breathing vapors, mist or gas. Avoid dust/aerosol formation. Always wear recommended Personal Protective Equipment. See section 8 for more information.
Emergency procedures	No special emergency precautions required.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Methods and material for containment and cleaning up	Soak up with inert absorbent material.
Reference to other sections	See section 8 for more information.

Section 7. Handling and Storage

Precautions for Safe Handling	Use personal protective equipment as required. No special handling advices are necessary.
Precautions for protection against explosions and fires	Not applicable.
Conditions for safe storage, including any incompatibilities	Keep container tightly sealed in a dry, cool and well-ventilated place. Recommended storage temperature: As described in technical data sheet.
Specific end use(s)	For research use or further manufacturing use only. Serum and blood proteins are not for direct administration into humans or animals.

Section 8. Exposure Controls, Personal Protection

Control Parameters

Chemical Name	Occupational Exposure Limits (OELs)	Occupational Exposure Limits (OELs)	ACGIH OEL (8-hour TWA)	ACGIH OEL (STEL)
DL-Dithiothreitol	n/a	n/a	n/a	n/a

The lists that were valid during the creation of this document were used as basis.

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Exposure Controls

Personal Protective Equipment (PPE)

Respiratory protection

In case of insufficient ventilation wear respirators and components tested and approved under appropriate government standard, such as NIOSH (US) or CEN (EU).

Hand protection

Handle with suitable chemical resistant gloves. Gloves must be inspected prior to use. Use proper glove removal. Wash and dry hands.

Eye protection

Tight sealing safety goggles with side-shields conforming to NIOSH (US) or EN 166(EU).

Body protection

Wear suitable impervious protective clothing.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Section 9. Physical and Chemical Properties

Physical and chemical properties

Physical state

Frozen liquid

Odor	No data available
Odor threshold	No data available
pH	6-8
Molecular weight	No data available
Melting Point / melting range	-10°C to 2°C
Boiling point / boiling range	No data available
Flash point	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper explosion limit	No data available
Lower explosion limit	No data available
Vapor Pressure	No data available
Vapor density	No data available
Relative density	No data available
Specific gravity	No data available
Solubility	No data available
Partition coefficient: n-octanol/water	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Other information	No data available

Section 10. Stability and Reactivity

Chemical Stability	Stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	No data available

Incompatible materials	No data available
Hazardous decomposition products	No data available
Polymerization	Hazardous polymerization does not occur under conditions of normal use.

Section 11. Toxicological Information

Information on toxicological effects

There is no evidence available indicating acute toxicity.

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LD50	Concentration / %
DL-Dithiothreitol	= 400 mg/kg (Rat, RTECS)	n/a	n/a	n/a

Skin corrosion / irritation	No data available
Serious eye damage / irritation	No data available
Respiratory or skin sensitization	No data available
Specific target organ toxicity (STOT) – single exposure	No data available
Specific target organ toxicity (STOT) – repeated exposure	No data available
Carcinogenicity	No data available
Germ cell mutagenicity	No data available
Reproductive toxicity	No data available
Aspiration hazard	No data available
Principle Routes of Exposure	Respiratory organs, mouth, skin, and eyes.
Symptoms of exposure	Nausea, Headache, Vomiting, Central nervous system depression. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Additional information	No data available

Section 12. Ecological Information

Ecotoxicity	Toxicity to daphnia and other aquatic invertebrates LC50 - Daphnia magna (Water flea) - 27 mg/l 48 h
Persistence and degradability	No information available
Bioaccumulative potential	No information available
Mobility in soil	No information available
Results of PBT and vPvB assessment	No information available
Other adverse effects	Do not dispose into surface water or sanitary sewer system.

Section 13. Disposal Considerations

Disposal of Product and Containers

It is the responsibility of the user of the product to determine at the time of disposal whether the product meets local criteria for hazardous waste. Waste management should be in full compliance with federal, state and local laws.

Section 14. Transport Information

IATA / ADR / DOT-US / IMDG

Not regulated in the meaning of transport regulation

UN Number	Not Regulated
UN proper shipping name	Not Applicable
Transport hazard class(es)	Not Applicable
Packing group	Not Applicable
Special Precautions for user	Not Applicable
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code	Not Applicable

Regulation (EC) 1907/2006 (REACH)

This product complies with or is exempted from the registration process in Regulation (EC) 1907/2006 (REACH);

- It is classified as non-hazardous in accordance with Regulation (EC) 1272/2008 (CLP);
- It is not regulated for transport under IATA/ADR/IMDG.

No hazardous labels should be applied to inner or outer packaging;

The delivery of this Safety Data Sheet is not a mandatory requirement under REACH.

Section 15. Regulatory Information

Chemical Name	US TSCA	TSCA Inventory notification - Active/Inactive	TSCA - EPA Regulatory Flags
DL-Dithiothreitol	Not Listed	n/a	n/a

TSCA 12(b) - Notices of Export

Not applicable

U.S. Federal Regulations

SARA 302 Components

Not applicable

SARA 313 Components

Not applicable

SARA 311/312 Hazards

Not applicable

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs)

Product does not contain HAPs.

CERCLA

Not Applicable

U.S. Department of Transportation

Reportable Quantity (RQ): Not applicable

DOT Marine Pollutant: Not applicable

DOT Severe Marine Pollutant: Not applicable

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

U.S. State Regulations

California Prop 65

Product does not contain chemicals listed under Proposition 65.

US State Right To Know Regulations

Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
DTT (Dithiothreitol) CAS#: 3483-12-3	DTT (Dithiothreitol) CAS#: 3483-12-3	DTT (Dithiothreitol) CAS#: 3483-12-3	DTT (Dithiothreitol) CAS#: 3483-12-3	DTT (Dithiothreitol) CAS#: 3483-12-3

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Chemical Name	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
DL-Dithiothreitol	3483-12-3 / 27565-41-9	Listed	Not Listed	248-531-9	Not Listed	Listed	Listed	Listed	Listed	Not Listed

Section 16. Other Information

Revision date: January 10, 2023

Contact information:

Phone: 1-858-202-1401

Email: support@bpsbioscience.com

This product is for research use only and is not intended for human or animal diagnostic or therapeutic uses. The recipient is responsible for ensuring that, where applicable, existing laws and guidelines are observed. All materials and mixtures may present unknown hazards and should be used with caution.

BPS Bioscience provides this information in good faith and is based on our present knowledge. This information shall not be taken as being all inclusive and is to be used only as a guide. This SDS does not constitute a warranty of any kind.

End of Safety Data Sheet